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Description

This invention relates to tapes and is concerned with tapes suitable for use as teartapes.

Teartapes are known to provide a means of facilitating the opening of packages such as packs of cigarettes, confectionery and the like including overwrapping formed from filmic packaging materials. They are adhered to the surface of the packaging material in a manner such that, in use, an end of the tear-tape can be pulled so as to tear the packaging material underlying the teartape to allow access to the contents.

Traditionally such teartapes have been made from cellulose film or derivatives of cellulose coated with barrier resistant and/or heat seal coatings. Such tapes could be readily applied to packaging material formed from films of similar type by moistening with a solvent to soften the coating and applying heat and pressure to give firm adhesion. The replacement of cellulose based packaging materials by the stronger and more cost effective polyolefine film packaging materials, and especially by biaxially oriented polypropylene films, has similarly led to the substitution of polypropylene for cellulose in teartape manufacture.

Polypropylene teartapes often comprise two ply laminates of similar polypropylene film to provide increased tear strength and also to protect any print applied to the surface of the lower layer. Two methods have been employed to apply these polypropylene tapes to polyolefine film packaging materials. In the case where the polyolefine packaging material is a lacquer coated film, a solvent is used to activate the coating and ensure adhesion of the teartape. Alternatively, if the polyolefine packaging material is uncoated, the teartape is caused to adhere by applying a hot melt wax composition. A lacquer coating is not usually a packaging requirement when using polyolefine packaging film since these have superior barrier properties to cellulose films. Also, in the case of polyolefines there is the opportunity to co-extrude films in order to provide for any specially demanding barrier properties. Hence the use of lacquer coated polyolefine packaging film simply to promote the adhesion of a teartape involves an unacceptable cost penalty. The use of hot melt wax compositions is also undesirable since this gives rise to:

1. the need for cleaning,
2. the need for close attention by the operative to recharge the baths with adhesive wax and to ensure temperatures are correct in order to promote satisfactory adhesion,
3. a safety hazard with high temperature wax baths,
4. distortion of the packaging film and/or tape as a consequence of the heat of application or of stress on cooling which can cause an unsightly

"cocking" effect, and

5. poor and inconsistent adhesion to film especially on starting and restarting the lamination process.

These disadvantages are particularly troublesome when stopping and starting the application of the teartape to the packaging film and the nature of the teartapes and their means of application are such that relatively small spools of tape containing no more than 2500-5000 metres have had to be used thus causing frequent stoppages on fast operating packaging lines.

GB-A-1 257 128 discloses a method of producing a package by loosely wrapping the article to be packaged in a heat shrinkable film of thermoplastic plastics material and heat shrinking the film about the article. A tear tape is included to facilitate opening the package. The tear tape may include a pressure sensitive adhesive. However there is no suggestion to use a tear tape which includes a base film formed from an oriented thermoplastic plastics material.

EP-A-0 067 332 discloses a device for feeding together a tear tape and filmic packaging material. In accordance with this device, the filmic packaging material is passed around, and driven by, a driven feed roller which is itself in frictional contact with a drive wheel for a reel carrying the teartape. The drive wheel is in frictional contact with the reel so as to drive the reel. Rotation of the reel allows the tear tape to unwind from the reel and follow a path to the nip between the drive wheel and the driven feed roller at which location it is superposed on the filmic packaging material for subsequent bonding thereto. The reel is fitted with a brake which reduces the rotational speed of the reel when the tension in the rear tape decreases due to tape breakage or as the filmic packaging material is stopping. The device has the disadvantage that it includes a frictional drive, rather than a positive drive, for the reel of tear-tape and this lack of a positive controllable drive for the tear tape means that tensions in the tape path cannot be properly overcome. Moreover the frictional drives may cause slippage and scuffing of the tear tape. Further there is no suggestion that the device may be used in conjunction with tear tapes comprising a base film formed from an oriented thermoplastic plastics material and coated with a pressure sensitive adhesive. Indeed the device would be unsuitable for use with such tear tapes since a much greater force is needed to unwind pressure sensitive tear tapes from a reel and there would be a tendency for the adhesive to migrate beyond the edges of the base film if significant pressure were to be exerted on the tear tape by the drive wheel.

It is an object of the present invention to provide an improved method of applying a tape to a film packaging material avoiding the above disadvantages.

According to one aspect of the present invention

there is provided a method of producing filmic packaging material having a tear tape adhered thereto by providing a tear tape on a rotatable reel, bringing together an end portion of the tear tape and the packaging material, moving the packaging material and rotating the reel to allow tear tape to be unwound from the reel and move along a path in a manner such that successive portions of the tear tape are drawn into contact with successive portions of the packaging material, and reducing the rotational speed of the reel when the tear tape breaks or the packaging material is stopping (as known from EP-A-0 067 332) characterised in that (i) the tear tape comprises an oriented thermoplastic plastics material base film coated with a pressure sensitive adhesive composition, (ii) the end portion of the tear tape is adhered to the packaging material by means of the pressure sensitive adhesive composition, and (iii) the reel is positively driven and tension imbalance between the tape and the packaging material is reduced by controlling the speed of movement of the tape in dependence on the speed of movement of the packaging material by increasing the rotational speed of the reel when the tension in the tape increases and decreasing the rotational speed of the reel when the tension in the tape decreases.

Said base film may, for example, have a thickness of from 20 to 100 microns and a width of from 1 to 10 mm. Preferably, the thickness is from 40 to 70 microns and the width is from 1.5 to 4 mm. The thermoplastic plastics material of the base film may be, for example, polyvinyl chloride or vinyl chloride copolymer, a linear polyester, or preferably a polyolefin such as polypropylene or a copolymer of propylene and ethylene. Preferably the plastics material of the base film is monoaxially oriented since this provides improved cross tear resistance and enables thinner tape to be produced than in the case where biaxially oriented material is used. Advantageously the tensile strength of such polypropylene or ethylene/propylene copolymer tape is from 1500 to 3000 kg/cm² in the longitudinal direction and from 200 to 500 kg/cm² in the transverse direction. Also, in this preferred embodiment, the extension in the longitudinal direction is from 30 to 50% and the extension in the transverse direction is from 800 to 1000%.

Any suitable pressure sensitive adhesive composition may be used. Thus it may, for example, be based on natural or synthetic rubber or on acrylic compounds and normally a primer coating will be provided between it and the surface of the base film so as to promote anchorage of the pressure sensitive adhesive composition. That surface of the base film which is not coated with the pressure sensitive adhesive composition will ordinarily be coated with a release agent.

In a particularly preferred embodiment, the base film is printed in a manner such that the printed mat-

ter is right reading when the tear tape is adhered to the filmic packaging material. For example, the printed matter may be printed normally onto a surface of the base film and overcoated with transparent pressure sensitive adhesive composition. Thus, when the tear tape is adhered to the inner surface of the filmic packaging material, the printed matter is right reading when viewed through the filmic packaging material and the adhesive composition. In this way, the printed matter is protected from abrasion and from possible contact with the contents of the package. Alternatively, the printed matter may be printed in reverse on one surface of a transparent base film and overcoated with release agent, the other surface being coated with transparent pressure sensitive adhesive composition. The printed matter will then be right reading when the tear tape is adhered to the inner surface of the packaging material and viewed through the base film, the adhesive and the packaging material. The matter printed can be either decorative or informative. Thus the tear tape can form a sales promotion aid and/or carry a health warning in, for example, the case where it is used in cigarette packing.

The tape is such that it can be produced in the form of traverse wound reels containing a large quantity of tape (e.g. at least 30,000 metres).

The method of the present invention enables the speed of movement of the tape to be controlled in dependence on the speed of movement of the filmic packaging material so as to reduce tension imbalance between the tape and the material.

By reducing imbalance between on the one hand the tension in those portions of the tape which are affixed to the material and on the other hand the tension in those portions of the material to which tape is affixed, unsightly puckering is reduced.

The method of the present invention is particularly useful in the case where the filmic packaging material is a polyolefine film material.

In accordance with a preferred embodiment, the speed of movement of the tape is controlled in dependence upon the tension in that part of the tape which is being drawn towards the surface i.e. in a part of the tape which has yet to be affixed to the surface. Generally, the optimum value of this tension will be in the range of from 5 to 200 gms.

The desired tension in the tape can be achieved utilising a tape dispenser in accordance with another aspect of the present invention.

According to this aspect of the present invention there is provided an apparatus for carrying out the aforesaid method which apparatus comprises (i) a means for moving the packaging material and (ii) a dispenser for supplying the tear tape to a location where the tear tape is to be contacted with the moving packaging material, which dispenser comprises a frame carrying

(a) a support means for receiving a rotatable reel

of the teartape.

(b) a guide means defining a tape path from the reel to said locations, said guide means comprising:

a fixed guide member (13), a second guide member (14) mounted for pivotal movement about a pin (16) so as to be relatively movable with respect to the first guide member in accordance with variations in tension of the tape in the tape path, a tension spring (19) extending between the members, and a slidable balance weight (20) carried by the second guide member and adjustable so that the second guide member is in equilibrium about the pin (16),

(c) a brake means (4,5,7,8) provided so as to reduce the speed of rotation of the reel 3 and controlled by relative movement of the members whereby the brake means is released as the tension of the tape increases and the brake means is applied as the tension of the tape decreases, and

(d) a drive means for positively driving the reel and having a rotational speed which increases in dependence on an increase in tension of the tape passing along said path.

In a particularly preferred embodiment, the guide means comprises first and second guide members which are relatively moveable such that the length of the tape in the tape path is varied. Variations in tension of the tape in the tape path cause the members to move with respect to one another so as to increase or decrease the length of the tape path as appropriate. The movement of the members is arranged to control the brake means whereby as the tension increases the brake means is released and, as the tension decreases, the brake means is applied. The drive means is such that it is approximately equivalent to the braking force and is preferably such as to exert a high torque at low speeds.

For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawing which shows a side view of a teartape dispenser in accordance with the present invention.

Referring to the drawing, the dispenser comprises a generally vertical frame 1 including a generally horizontal rotatable spindle 2 for receiving a reel 3 of the teartape of the present invention in such a manner that the reel is freely rotatable with the spindle.

The dispenser includes a brake arranged to act upon the spindle so that upon actuation it reduces the rotational speed of the reel. The brake comprises a generally L-shaped member having first and second limbs 4 and 5 and mounted for pivotal movement about pin 6 passing through a bracket 7 fixed to the frame 1. The first limb 4 carries a brake pad 8 which ordinarily is urged into engagement with the spindle

2 by means of a spring 9.

A torque motor 10 is affixed to the frame 1 and is arranged so as to be able to rotate the spindle 2 (and hence the reel 3) by means of a belt drive 11. The motor 10 is controlled by means of a variable auto-transformer 12 mounted on the frame 1. The auto-transformer 12 is capable of producing a continuously variable output voltage to drive the motor.

The dispenser is for use in conjunction with an overwrapping machine for applying filmic packaging material, and particularly polyolefine film packaging material, to packs of cigarettes, confectionery and like articles. A part only of this machine is shown in the drawing wherein reference numeral 50 denotes a roller over which the packaging material 51 passes en route to the station at which it is applied to the article to be packaged. The roller 50 is driven by motor 53 so as to move the packaging material through the machine. The free end of the tape is adhered to the packaging material and the tape is fed from the dispenser to the location where it is applied to the packaging material (i.e. to where the packaging material passes over roller 50) as a consequence of the movement of the packaging material, the reel 3 rotating as appropriate to allow the tape to be fed in this way. Thus successive portions of the tape are drawn into contact with successive portions of the packaging material and become adhered thereto by the pressure sensitive adhesive coating of the tape.

The dispenser includes a guide which defines a tape path from the reel 3 to the roller 50. The guide comprises first and second guide members. The first guide member is in the form of a fixed arm 13 secured to the frame 1 and including a plurality of guide rollers 15. The second guide member is in the form of a compensating arm 14 pivotally mounted on frame 1 about pin 16. The compensating arm 14 similarly includes a plurality of guide rollers 17. One end of the fixed arm 13 carries a threaded adjusting screw 18 and a tension spring 19 is provided between the end of the screw 18 and the compensating arm 14. The compensating arm 14 carries a slidable balance weight 20 and is provided with an adjustable screw 21 at a location where it can abut against the second limb 5 of the brake. A micro switch (not shown) is provided in a location where it will sense a predetermined lower position of the compensating arm 14 and disengage the motor 10.

The guide rollers 15 and 17, together with additional guide roller 52 of the packaging machinery define a tape path (shown by the broken line) between the reel 3 and the location at which the tape is to be applied to the packaging material.

In use, the sliding balance weight 20 is first adjusted so that compensating arm 14 is in equilibrium about the fulcrum pin 16. The tape is then led from the reel 3 and threaded through guide rollers 15, 17 and 52 and the free end is adhered to the packaging

material 51 on roller 50. The tension of the tape in the tape path depends upon the tension in spring 19 (which is determined by adjusting screw 18) and the number of guide rollers traversed by the tape and these are selected so that the tension in the tape is as desired. The compensating arm 14 will then adopt a preferred disposition with respect to the fixed arm 13 and the brake and the motor 10 are then adjusted so that the compensating arm 14 ordinarily adopts this disposition during running conditions. This is achieved by appropriately setting the adjustable screw 21 and by appropriately setting the autotransformer 12 so that the torque developed by the motor 10 is just sufficient to overcome the braking force exerted by the brake. In this way, in the event that the speed of the packaging material 51 is less than the speed of the tape in the guide path, (i.e. when the tape is overrunning, for example when the packaging machinery is stopping), the resultant decrease in tension in the tape in the guide path allows the compensating arm 14 to pivot about pin 16 under the influence of tension spring 19 so as to extend the length of the tape path and thereby increase the tension in the tape. Simultaneously, this movement of the compensating arm also causes the brake pad 8 to become engaged with the spindle 2 whereby the speed of the spindle 2 (and hence the speed of the tape in the tape path) is decreased. The compensating arm also activates the aforementioned microswitch to disengage the motor 10 and thereby prevent any possible overriding of the brake. In the event that the speed of the tape in the tape path is less than the speed of the packaging material 51 (for example during start up of the packaging machinery), the tension in the tape in the tape path increases and causes the compensating arm 14 to pivot about pin 16 against the action of the spring 19 so as to reduce the length of the tape path and thereby decrease the tension in the tape. Simultaneously, this movement of the compensating arm 14 causes the brake pad 8 to become disengaged from the spindle 2 whereby the torque motor 10 can increase the speed of rotation of the spindle and hence increase the speed of the tape in the tape path. The use of a torque motor 10 to drive the spindle 2 and hence reel 3 is particularly valuable when reels containing a large quantity of tape are used since it can readily overcome the initial inertia of such reels. The torque motor drive provides maximum torque when the brake is applied and reduced torque as speed increases and thus reduces the tendency to snatch at start up or to overrun on rapid deceleration.

By use of a tape dispenser of the above type, the speed of the tape in the tape path is controlled in dependence on the speed of the packaging material whereby the tension in the tape in the tape path is controlled so that it approximates to the optimum tension. Hence tension imbalance between the tape and

the packaging material and the puckering effects caused thereby are significantly reduced.

The following Examples illustrate the invention.

Example 1

A uniaxially oriented film was formed from a copolymer of 90% propylene and 10% ethylene by extruding a film of the copolymer on to chill casting rollers in a conventional manner followed by stretching in the machine direction between heated rollers to impart a stretch of about six times the original length. After annealing the film had a tensile strength in the machine direction of 2800 kg/cm² with an elongation at break of 30-50%. Elongation in the lateral direction was 800-1000% at break. The film had a thickness of 40 micron and both surfaces of the film were subjected to a corona discharge at 40-50 dynes per cm. One of the surfaces was then printed normally by a gravure process. (Other conventional printing processes such as a flexographic process may be used). The printed surface was then coated with a primer suitable for promoting anchorage of a subsequently applied coating of a transparent pressure sensitive adhesive composition. The non-printed surface was coated with a release agent.

The release agent comprised 100 pts of Silcolease 425 (ICI trade name for a 30% solids concentration of dimethyl polysiloxane and methyl hydrogen polysiloxane resins in toluene) together with 4 pts of Catalyst 62A and 4 pts Catalyst 62B (ICI trade names to describe 50% solids concentration of amino alkoxy-polysiloxane in toluene and alkyl tin acrylate in xylene). It was applied to give a dry coating weight of 0.25 gms. per square metre. The primer was a solution in toluene of 25 parts of natural crepe rubber and 8 parts of a cross linking agent (known by the trade mark Vulcabond TX) applied over the printed surface to give a dry coating weight of 0.25 gms. per square metre. Vulcabond TX is manufactured by Imperial Chemical Industries Ltd., and is a 50% solution of polyisocyanate (mainly diphenyl methane diisocyanate) in xylene. The pressure sensitive adhesive composition was a solution of 100 parts of natural crepe rubber, 110 parts of a tackifying resin having a melting point of 100/115°C (known by the trade mark Arkon P) and 1 part of antioxidant (known under the trade name Irganox) dissolved in a hydrocarbon mixture (known under the trade name SPB 2). This was applied by conventional reverse roll coating to give a dry coating weight of 15-20 gms. per square metre. Arkon P is marketed by Arakara Chemicals and is a fully saturated alicyclic hydrocarbon resin and Irganox is marketed by Ciba Geigy and is a high molecular weight hindered polyphenol. The coated film was then slit to 3 mm width and the resultant tear tape was traverse wound on to centres of internal diameter 150 mm and width 170 mm to provide reels carrying con-

tinuous lengths of tape (e.g. 30,000-50,000 metres long as required). The reels were then inserted into a tape dispenser as shown in the drawing and this was used to apply the tape to a polypropylene packaging film in a film overwrap machine. The interacting tension compensator and brake mechanisms and the adjustable torque motor drive of the tape dispenser enabled tension imbalance between the tape and the film to be avoided particularly during starting and stopping of the machine. The printed matter on the tear tape was right reading when viewed through the adhesive and the packaging film.

Example 2

Example 1 was repeated using a pressure sensitive adhesive composition and primer based on acrylic resins and release agent based on a different silicone resin. Similar results were obtained.

The pressure sensitive adhesive composition was a 45% solids solution of a self cross-linking acrylic polymer in a mixture of 37 parts ethyl acetate, 26 parts heptane, 26 parts isopropanol, 1 part toluene and 1 part acetylacetone. This is commercially available under the trade name Bondmaster 1054 from National Adhesives Ltd.

The primer was a mixture of 100 parts of the aforesaid Bondmaster 1054, 1400 parts of toluene, and 10 parts of the aforesaid Vulcabond TX.

The release agent comprised 20 parts of a material known under the trade name Syloff 7046, 79.9 parts of toluene and 0.1 part of a reactive siloxane polymer known as catalyst/cross linking agent 7048 (Dow Corning). Syloff 7046 is a mixture of reactive siloxane polymers available from Dow Corning.

Claims

1. A method of producing filmic packaging material (51) having a tear tape adhered thereto by providing a tear tape on a rotatable reel (3), bringing together an end portion of the tear tape and the packaging material (51), moving the packaging material (51) and rotating the reel (3) to rotate to allow tear tape to be unwound from the reel (3) and move along a path (13, 14, 15, 17) in a manner such that successive portions of the tear tape are drawn into contact with successive portions of the packaging material (51), and reducing the rotational speed of the reel (3) when the tear tape breaks or the packaging material is stopping characterised in that (i) the tear tape comprises an oriented thermoplastic plastics material base film coated with a pressure sensitive adhesive composition, (ii) the end portion of the tear tape is adhered to the packaging material by means of the pressure sensitive adhesive composition, and (iii) the reel is positively driven and tension imbalance between the tape and the packaging material is reduced by controlling the speed of movement of the tape in dependence on the speed of movement of the packaging material by increasing the rotational speed of the reel when the tension in the tape increases and decreasing the rotational speed of the reel when the tension in the tape decreases.
2. A method according to claim 1 wherein the base film of the tear tape has a thickness of from 20 to 100 microns and a width of from 1 to 10 mm.
3. A method according to claim 1 or 2 wherein the base film of the tear tape is formed of a polyolefin.
4. A method according to claim 1, 2 or 3 wherein the base film of the tear tape is monoaxially oriented.
5. A method according to claim 1, 2, 3 or 4 wherein a surface of the base film carries printed matter in a manner such that the printed matter is readable through the pressure sensitive adhesive composition.
6. An apparatus for carrying out the method according to any of claims 1 to 5, which apparatus comprises (i) a means (53) for moving the packaging material and (ii) a dispenser for supplying the tear tape to a location where the tear tape is to be contacted with the moving packaging material, which dispenser comprises a frame (1) carrying
 - (a) a support means (2) for receiving a rotatable reel (3) of the tear tape,
 - (b) a guide means (13, 14, 15, 17) defining a tape path from the reel (3) to said location, said guide means comprising:
 - a fixed guide member (13), a second guide member (14) mounted for pivotal movement about a pin (16) so as to be relatively movable with respect to the first guide member in accordance with variations in tension of the tape in the tape path, a tension spring (19) extending between the members, and a slidable balance weight (20) carried by the second guide member and adjustable so that the second guide member is in equilibrium about the pin (16),
 - (c) a brake means (4, 5, 7, 8) provided so as to reduce the speed of rotation of the reel 3 and controlled by relative movement of the members whereby the brake means is released as the tension of the tape increases and the brake means is applied as the tension of the tape decreases, and

(d) a drive means (10) for positively driving the reel (3) and having a rotational speed which increases in dependence on an increase in tension of the tape passing along said path.

7. An apparatus as claimed in claim 6 wherein the drive means (10) is operably connected to said guide members (13, 14) whereby, as the tension decreases, said relative movement of the guide members disengages the drive means.

Patentansprüche

1. Ein Verfahren zur Herstellung von Filmverpackungsmaterial (51) mit einem angeklebten Reißstreifen durch Vorsehen eines Reißstreifens auf einer drehbaren Rolle (3). Zusammenbringen eines Endabschnittes von Reißstreifen und Verpackungsmaterial (51), Bewegen des Verpackungsmaterials (51) und Drehen der Rolle (3), sodaß der Reißstreifen von der Rolle (3) abgewickelt und entlang einer Bahn (13,14,15,17) so bewegt werden kann, daß aufeinanderfolgende Abschnitte des Reißstreifens in Kontakt mit aufeinanderfolgenden Abschnitten des Verpackungsmaterials (51) gezogen werden, und Verringern der Drehgeschwindigkeit der Rolle (3), wenn der Reißstreifen bricht oder das Verpackungsmaterial stoppt, dadurch gekennzeichnet, daß (i) der Reißstreifen eine, mit einer Haftklebstoffzusammensetzung überzogene Grundfolie aus orientiertem, thermoplastischen Kunststoffmaterial aufweist; (ii) der Endabschnitt des Reißstreifens mit dem Verpackungsmaterial mittels der Haftklebstoffzusammensetzung verklebt ist und daß (iii) die Rolle zwangsgetrieben ist und das Spannungsungleichgewicht zwischen dem Streifen und dem Verpackungsmaterial durch das Steuern der Bewegungsgeschwindigkeit des Streifens in Abhängigkeit von der Bewegungsgeschwindigkeit des Verpackungsmaterials durch Erhöhen der Drehgeschwindigkeit der Rolle beim Ansteigen der Spannung im Streifen und Verringern der Drehgeschwindigkeit der Rolle beim Abnehmen der Spannung im Streifen verringert wird.
2. Ein Verfahren gemäß Anspruch 1, wobei die Grundfolie des Reißstreifens eine Dicke von 20 bis 100 Mikron und eine Breite von 1 bis 10 mm besitzt.
3. Ein Verfahren gemäß Anspruch 1 oder 2, wobei die Grundfolie des Reißstreifens aus einem Polyolefin gebildet ist.
4. Ein Verfahren gemäß Anspruch 1,2 oder 3, wobei

die Grundfolie des Reißstreifens einaxial orientiert ist.

5. Ein Verfahren gemäß Anspruch 1,2,3 oder 4, wobei eine Oberfläche der Grundfolie einen Aufdruck in solcher Weise trägt, daß der Aufdruck durch die Haftklebstoffzusammensetzung lesbar ist.
6. Eine Vorrichtung zum Durchführen des Verfahrens gemäß irgendeinem der Ansprüche 1 bis 5, welche Vorrichtung (i) ein Mittel (53) zum Bewegen des Verpackungsmaterials und (ii) eine Ausgabevorrichtung für die Zufuhr des Reißstreifens zu einem Ort, wo der Reißstreifen mit dem sich bewegenden Verpackungsmaterial in Kontakt gebracht werden soll, welche Ausgabevorrichtung einen Rahmen (1) aufweist, der (a) ein Tragmittel (2) für die Aufnahme einer drehbaren Rolle (3) des Reißstreifens, (b) ein Führungsmittel (13,14,15,17), das eine Streifenbahn von der Rolle (3) zu besagtem Ort definiert, welches Führungsmittel ein fixes Führungselement (13); ein zweites Führungselement (14), welches für eine Schwenkbewegung um einen Stift (16) montiert ist, um in Übereinstimmung mit Veränderungen in der Spannung des Streifens in der Streifenbahn relativ bewegbar zu sein, eine sich zwischen den Elementen erstreckende Zugfeder (19) und ein verschiebbares Ausgleichsgewicht (20), welches vom zweiten Führungselement getragen wird und so einstellbar ist, daß sich das zweite Führungselement im Gleichgewicht um den Stift (16) befindet, umfaßt, (c) ein Bremsmittel (4,5,7,8), das zur Verringerung der Drehgeschwindigkeit der Rolle (3) vorgesehen ist und von der Relativbewegung der Elemente gesteuert wird, wodurch das Bremsmittel beim Ansteigen der Spannung im Streifen gelöst wird und das Bremsmittel beim Abnehmen der Spannung im Streifen angezogen wird, und (d) ein Antriebsmittel (10) zum zwangsläufigen Antrieb der Rolle (3) trägt, welches eine Drehgeschwindigkeit hat, welche in Abhängigkeit von einem Ansteigen der Spannung des sich entlang besagter Bahn bewegenden Streifens ansteigt.
7. Eine Vorrichtung wie in Anspruch 6 beansprucht, wobei das Antriebsmittel (10) mit besagten Führungselementen (13,14) betriebsmäßig verbunden ist, wodurch die besagte Relativbewegung der Führungselemente das Antriebsmittel beim Abnehmen der Spannung außer Eingriff bringt.

Revendications

1. Procédé pour réaliser un produit d'emballage

- sous forme de film (51), auquel est collée une bandelette d'arrachage, consistant à placer une bandelette d'arrachage sur une bobine tournante (3), à réunir une partie terminale de la bandelette d'arrachage et le produit d'emballage (51), à déplacer le produit d'emballage (51) et faire tourner la bobine (3) pour permettre à la bandelette d'arrachage de se dérouler de la bobine (3) et de se déplacer le long d'une trajectoire (13, 14, 15, 17), de façon que des parties successives de la bandelette d'arrachage soient tirées pour être mises en contact avec des parties successives du produit d'emballage (51), et à réduire la vitesse de rotation de la bobine (3) quand la bandelette d'arrachage se casse ou le produit d'emballage s'arrête, caractérisé en ce que (i) la bandelette d'arrachage est constituée d'un film de base, en une matière plastique thermoplastique orientée, ce film étant revêtu d'une composition adhésive de contact, (ii) la partie terminale de la bandelette d'arrachage est collée au produit d'emballage au moyen de la composition adhésive de contact, et (iii) la bobine est entraînée par entraînement direct et le déséquilibre de tension entre la bandelette et le produit d'emballage est réduit en réglant la vitesse de déplacement de la bandelette en fonction de la vitesse de déplacement du produit d'emballage en augmentant la vitesse de rotation de la bobine lorsque la tension dans la bandelette augmente et en diminuant la vitesse de rotation de la bobine lorsque la tension dans la bandelette diminue.
2. Procédé selon la revendication 1, dans laquelle le film de base de la bandelette d'arrachage a une épaisseur de 20 à 100 micromètres et une largeur de 1 à 10 mm.
 3. Procédé selon la revendication 1 ou 2, dans lequel le film de base de la bandelette d'arrachage est constitué d'une polyoléfine.
 4. Procédé selon la revendication 1, 2 ou 3, dans lequel le film de base de la bandelette d'arrachage présente une orientation monoaxiale.
 5. Procédé selon la revendication 1, 2, 3 ou 4, dans lequel une surface du film de base porte un texte imprimé de telle façon que le texte imprimé puisse être lu à travers la composition adhésive de contact.
 6. Appareillage pour la mise en oeuvre du procédé selon l'une quelconque des revendications 1 à 5, lequel appareillage comprend (i) un moyen (53) pour déplacer le produit d'emballage et (ii) un distributeur pour envoyer la bandelette d'arrachage à un point où la bandelette d'arrachage devra

être mise en contact avec le produit d'emballage en déplacement, lequel distributeur comprend un cadre (1) qui porte :

- (a) un moyen de soutènement (2) destiné à recevoir une bobine tournante (3) de la bandelette d'arrachage,
 - (b) un moyen de guidage (13, 14, 15, 17), définissant une trajectoire pour la bande, de la bobine (3) audit point, ledit moyen de guidage comprenant un élément de guidage fixe (13), un second élément de guidage (14) monté de manière à permettre un mouvement de pivotement sur une goupille (16), de manière à être relativement mobile par rapport au premier élément de guidage selon les variations de tension de la bandelette le long de la trajectoire de la bandelette, un ressort de tension (19) s'étendant entre les éléments et un contrepoids coulissant (20) porté par le second élément de guidage et réglable de manière que le second élément de guidage se trouve en équilibre sur la goupille (16).
 - (c) un moyen de freinage (4, 5, 7, 8), prévu de façon à réduire la vitesse de rotation de la bobine 3 et commandé par le déplacement des éléments l'un par rapport à l'autre, le moyen de freinage étant relâché au-fur-et-à-mesure que la tension de la bandelette augmente et le moyen de freinage étant appliqué au-fur-et-à-mesure que la tension de la bandelette diminue et,
 - (d) un moyen d'entraînement (10) destiné à entraîner par entraînement direct la bobine (3), et ayant une vitesse de rotation qui augmente en fonction d'une augmentation de la tension de la bande passant sur sa trajectoire.
7. Appareillage selon la revendication 6, dans lequel le moyen d'entraînement (10) est raccordé d'une manière opérationnelle auxdits organes de guidage (13, 14), de façon que, quand la tension diminue, ledit déplacement relatif des organes de guidage dégage le moyen d'entraînement.

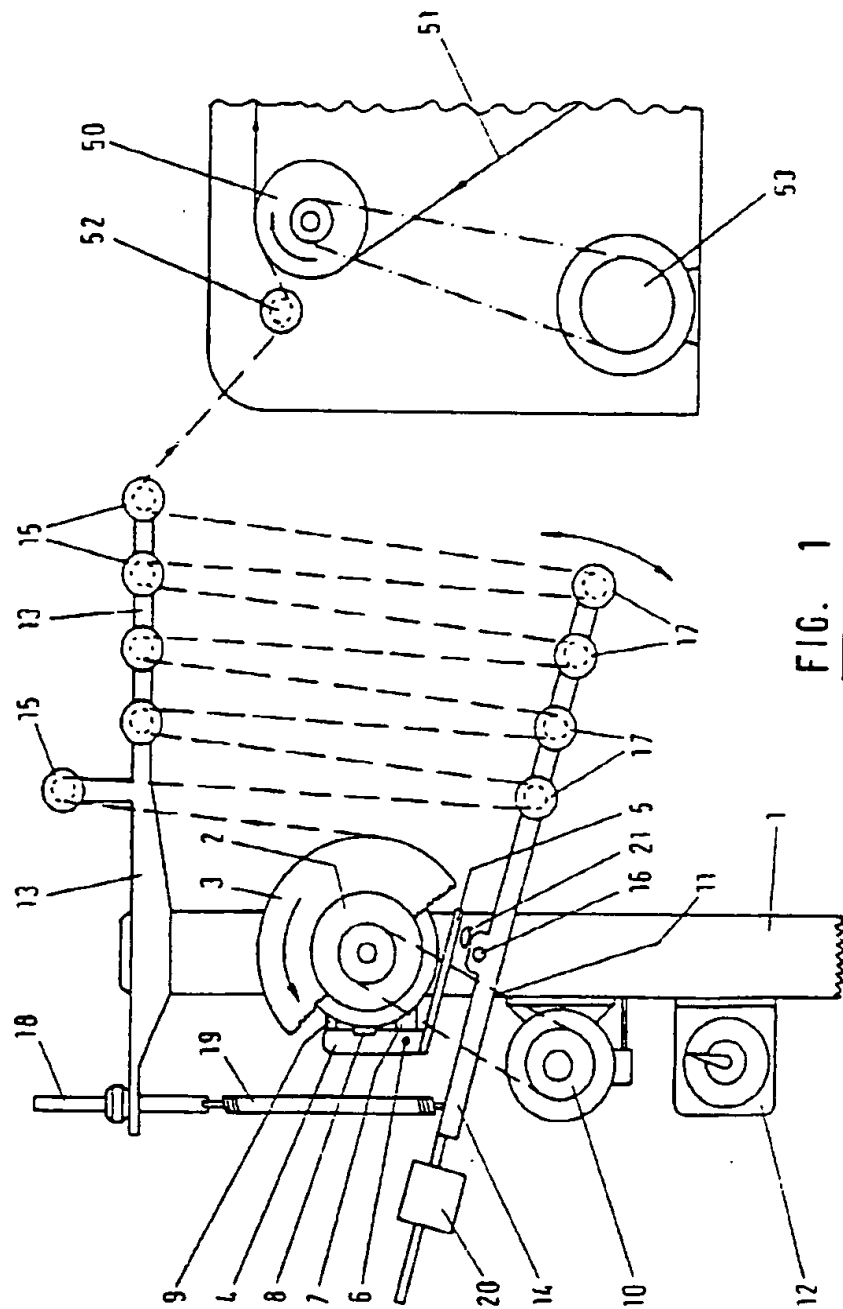


FIG. 1